

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) Irradiation cell for producing a radioisotope of interest through the irradiation of a target material by a particle beam, comprising a metallic insert forming a cavity designed to house the target material and to be closed by an irradiation window, wherein said metallic insert comprises at least two separate metallic parts of different materials, being composed of at least a first part comprising said cavity and a second part.

2. (Previously Presented) Irradiation cell according to claim 1, wherein said second part surrounds said cavity, in a manner to form a channel for guiding a cooling medium.

3. (Previously Presented) Irradiation cell according to claim 2, wherein said cell further comprises a supply means for a cooling medium and in connection with said supply means, an element, called "diffusor", surrounding said cavity, said diffusor being arranged for guiding said cooling medium around said cavity, and wherein said second part surrounds both said cavity and said diffusor, in a manner to form a return path for said cooling medium between said diffusor and said second part.

4. (Previously Presented) Irradiation cell according to claim 1, wherein the contact between said first and second part is a metal-to-metal contact, and wherein the sealing between said parts is obtained by at least one O-ring.

5. (Previously Presented) Irradiation cell according to claim 1, wherein the sealing between said first and second part is obtained by a gold foil present between said parts.

6. (Previously Presented) Irradiation cell according to claim 1, wherein said insert is composed of two metallic parts.

7. (Previously Presented) Irradiation cell according to claim 1, wherein said parts are assembled together by a number of bolts.

8. (Previously Presented) Irradiation cell according to claim 1, wherein said parts are assembled together by welding.

9. (Previously Presented) Irradiation cell according to claim 1, wherein said first part comprises a flat, circular and ring-shaped portion having an inner circular edge and an outer circular edge, a cylindrical portion rising perpendicularly from the inner circular edge of said flat portion, and a hemispherical portion being on top of said cylindrical portion, the cavity being formed inside said cylindrical and hemispherical portions.

10. (Previously Presented) Irradiation cell according to claim 9, wherein said cylindrical portion and/or said hemispherical portion have a wall thickness comprised between 0.3 and 0.7 mm and/or said cavity has a length of at least 50 mm.

11. (Previously Presented) Irradiation cell according to claim 9, wherein said second part has the form of a hollow cylinder having two flat sides essentially perpendicular to a cylindrical side, said cylinder being connected by one flat side against the flat portion of said first part.

12. (Currently Amended) Irradiation cell according to ~~claim 9~~ claim 1, wherein one of said two parts has a ridge and the other has a groove corresponding to said ridge, in order to obtain perfect coaxial positioning of said two parts with respect to each other.

13. (Previously Presented) Irradiation cell according to claim 1, wherein said first part ~~{8}~~ is made of niobium or tantalum.

14. (Previously Presented) Irradiation cell according to claim 6, wherein said second part is made of stainless steel.

15. (Cancelled).

16. (Currently Amended) Method for ~~producing~~ preparing an insert, ~~according to claim 14~~, comprising the steps of:

- forming a first part through machining;
- forming a second part; and
- assembling or binding said first part and said second part with bolts or through welding.

17. (Currently Amended) ~~Use of an irradiation cell according to claim 1, Method~~ for filling the cavity volume with about 50% of target material, before starting irradiation, by using an irradiation cell according to claim 1.

18. (New) Method for preparing an irradiation cell according to claim 15, wherein the cavity designed by the assembling/binding of said first part and said second part is filled with a target material.

19. (New) Method for preparing an irradiation cell according to claim 15, wherein the cavity is filled with about 50% of target material.